GRIGOR'YEV, V.

Riddles for which there are no hypotheses. IUn.tekh. 6 no.2:72-74 '62.

(MIRA 15:2)

(Moon--Surface)

GRIGOR'YEV, V., inzh.

The earth in the sun's tenacles. IUn.tekh. 6 no.12:37-39 D '61.
                                        (MIRA 14:12)
                (Earth--Rotation)

GRIGOR'YEV, V.A., kand. tekhn. nauk; KOLACH, T.A., dots.;
SOKOLOVSKIY, V.S., assistent; TEMKIN, R.M., inzh.;
LEBEDEV, P.D., doktor tekhn. nauk, prof.; red.;
ANTIKAYN, P.A., red.; BORUNOV, N.I., tekhn. red.

[Concise manual on heat exchangers]Kratkii spravochnik po
teploobmennym apparatam. By V.S.Grigor'ev i dr. Pod red.
P.D.Lebedeva. Moskva, Gosenergoizdat, 1962. 255 p.
(MIRA 15:9)

(Heat exchangers)

BALAYKA, B.[Balajka, Bohumil]; SIKORA, K.[Sykora, Karel]; GOL'DENBERG,
G.M., inzh.[translator]; GRIGOR'YEV, V.A., kand. tekhn. nauk,
red.; YEVSTAF'YEVA, N., red.izd-va; EL'KIND, V.D., tekhn. red.

[Heat transfer processes in heat exchangers of the chemical
industry]Protsessy teploobmena v apparatakh khimicheskoi pro-
myshlennosti. Pod red. V.A.Grigor'eva. Moskva, Mashgiz. 1962.
350 p.   (MIRA 16:1)
      (Heat—Transmission) (Heat exchangers)

DOLININ, N.P.; LUKOMSKIY, S.M., kand. tekhn. nauk, retsenzent; GRIGOR'YEV, V.A., kand. tekhn. nauk, red.; TAIROVA, A.L., red.izd-va; UVAROVA, A.F., tekhn. red.

[Units for heating chemical apparatus by means of high-temperature organic media] Ustanovki dlia nagreva khimicheskoi apparatury vysokotemperaturnymi organicheskimi teplonositeliami. Moskva, Mashgiz, 1963.   290 p.   (MIRA 16:4)
     (Heat engineering) (Chemical apparatus) (Biphenyl)

GRIGOR'YEV, V.A.

Device for the control of warping of crankshaft press slides.
Kuz.-shtam.proizv. 3 no.6:47-48 Je '61.   (MIRA 14:6)
(Power presses)
(Automatic control)

GRIGOR'YEV, V.A.

Safety appliances for presses. Mashinostroitel' no.8:30 Ag
'62.   (MIRA 15:8)
                        (Power presses--Safety appliances)

GRIGOR'YEV, V.A.

Modernisation of hydraulic presses used in manufacturing parts
of powder materials. Mashinostroitel' no.4:13-14 Ap '63.
(MIRA 16:5)

(Hydraulic presses)

NIKOLAYEV, A.V.; GRIGOR'YEV, V.A.

Coprecipitaion in the system $Zn^{2+} - Co^{2+} - [Hg(SCN)_4]$
studied by means of radiometric titration. Dokl. AN SSSR
155 no. 4:853-856 Ap '64.   (MIRA 17:5)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN
SSSR. 2. Chlen-korrespondent AN SSSR (for Nikolayev).

NIKOLAYEV, A.V.; GRIGOR'YEV, V.A.

Coprecipitation of thallium (I) with the tetrathiocyanomercuroates
of zinc, cobalt, and cadmium. Dokl. AN SSSR 155 no.6:1368-1370
Ap '64.   (MIRA 17:4)

1. Chlen-korrespondent AN SSSR (for Nikolayev).

GRIGOR'YEV, V.A.

Mechanized gauging of cermet bushings. Mashinostroitel'
no. 5:7-8 My '64.   (MIRA 17:7)

NIKOLAYEV, A.V.; GRIGOR'YEV, V.A.

Tetrathiocyanomercuroate of monovalent thallium. Zhur.
noorg. khim. 10 no.1:281-283 Ja '65.   (MIRA 18:11)

1. Submitted Jan. 3, 1964.

NIKOLAYEV, A.V.; GRIGOR'YEV, V.A.

Determination of the surface area of tetrathiocyanomercurates
by the isotope exchange method. Radiokhimiia 7 no.2:252-253
'65.   (MIRA 18:6)

SOV/143-58-9-10/18

AUTHOR: Kolach, T.A., Candidate of Technical Sciences;
            Grigor'yev,   V.A., Engineer

TITLE: Study of the Viscosity of Electrolytic Alkalis
            (Issledovaniye elektroliticheskikh shchelokov)

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Energetika,
            1958, Nr 9, pp 65-67 (USSR)

ABSTRACT: The paper contains the results of experimental tests
            on the viscosity of electrolytic alkalis. The test
            equipment is first described. A comparative method is
            employed using a Pinkevich glass viscosimeter for
            measuring viscosity. The equipment consists of a vert-
            ical electric furnace, in which a metal pot-thermostat
            filled with turbine oil is placed. The viscosimeter is
            placed vertically in the pot, in the walls of which
            heat proof glass windows are let in to observe as the
            fluid flows out into the capillaries of the viscosi-
            meter. The temperature of the solution was measured

Card 1/3   with a copper-constantan thermoelement. To record the

SOV/14.58-9-10/18

Study of the Viscosity of Electrolytic Alkalis

temperature field in the thermostat fluid a three-junction copper constantan differential thermoelement was used. The temperature field was also measured in a radial direction using a comb of 4 thermoelements. The temperature difference between the lower end of the capillary and the measuring ball did not exceed 0.25°C. The viscosity of the solution was determined by the formula:

$$V_t = c_t\tau - \frac{0.56 \ Q\tau}{8 \ L \ \tau} \quad ccm$$

where V_t is the kinematic viscosity of the solution, c_t = the viscosimeter constant at the test temperature in ccm/sec, τ = outlet time of the work volume (in secs) of the fluid, L = capillary length in mm and $Q\tau$ = work volume of the fluid which flows through the viscosimeter in the time τ. There is 1 graph and 3 Soviet references.

ASSOCIATION: Moskovskiy ordena Lenina energeticheskiy institut (Moscow Power Engineering Institute)

Card 2/3

· Study of the Viscosity of Electrolytic Alkalis   SOV/148-58-9-10/18

SUBMITTED: May 12, 1958

Card 3/3

5(4), 5(2)

AUTHORS: Kolach, T. A., Candidate of Technical Sciences, Grigor'yev, V. A., Candidate of Technical Sciences

TITLE: Exchange of Experience (Obmen opytom). Investigation of the Viscosity of Electrolytic Lyes (Issledovaniye vyazkosti elektroliticheskikh shchelokov)

ABSTRACT: The investigations mentioned in the title were made with solutions the composition of which (Table) corresponded to that of electrolytic lyes in evaporating plants. The viscosity was determined by the comparison method by use of glass viscosimeters according to Pinkevich. The viscosimeters were calibrated by the Institut mer i izmeritel'nykh priborov (Institute for Measures and Measuring Instruments). The measuring instrument (Fig 1) was provided with an electric furnace, the temperature of the test solution was measured with copper/Constantan thermocouples. The temperature gradient was also measured. The measurement of temperature was carried out according to a compensation scheme ($\pm$ 0.06°) by means of a potentiometer PPTV-1 and a reflecting galvanometer M-21. The kinematic viscosity of the solutions was determined in the temperature range of between 20° and 10-15° below the boiling

Card 1/2

SOV/64-59-1-19/24

Exchange of Experience. Investigation of the Viscosity of Electrolytic
Lyes

point of the solution, and was represented graphically in
comparison with data (Ref 3) on the viscosity of mixtures
of aqueous NaOH and NaCl solutions (Fig 2). The evaluation
of the experimental results according to an equation (4) on
the temperature course of the viscosity curves is also in-
dicated (Fig 3). There are 3 figures, 1 table and 3 Soviet
references.

Card 2/2

PUTILOV, K.A.; GRIGOR'YEV, V.A., redaktor; AKHLAMOV, S.N., tekhni-
cheskiy redaktor

[Physics course.] Kurs fiziki. Izd. 6-e, perer. Moskva, Gos.
izd-vo tekhniko-teoreticheskoy lit-ry. Vol.1.[Mechanics,
Acoustics, Molecular physics, Thermodynamics.] Mekhanika.
Akustika. Molekuliarnaia fizika. Termodinamika. 1954. 708 p.
        (Physics)   (MLRA 8:3

Grigor'yev, V. A.

USSR/Processes and Equipment for Chemical Industries--   K-1
     Processes and apparatus for chemical technology.

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10599

Author : Baklastov, A. M. and Grigor'yev, V. A.
Inst   : Not given
Title   : Organosilicon Heat Transfer Media

Orig Pub: Prom. energetika, 1956, No 6, 1-4

Abstract: The heat capacity and density of tetracresyloxysilane (I)
have been determined experimentally, as have been the ...
viscosity, thermal stability, thermal conductivity,
corrosion properties, and hygroscopic properties of I
and of tetraxylyloxysilane (II). The thermal stability
tests were conducted at 314° for 563 hrs.; no marked
decomposition of the heat transfer fluids was observed
during those tests. The tests have shown that under
static conditions I and II practically do not attack
carbon steels, copper, brass, and duralumin. The hydro-
lysis of I and II proceeds with the formation of an

Card 1/2

USSR/Processes and Equipment for Chemical Industries--   K-1
         Processes and apparatus for chemical technology.

Abs Jour: Ref Zhur-Khimiya, No 3, 1957, 10599

Abstract: oerthosilicic acid gel and the corresponding homolog of
           phenol, as, e.g., in the equation:

$$(CH_3C_6H_4O)_4Si + H_2O \longrightarrow Si(OH)_4 + 4CH_3C_6H_4OH$$

Card 2/2

GRIGOR'YEV, V.A., Cand Tech Sci --(diss) " Experimental study of certain high-temperature silico-organic heat carriers." Mos, 1958. 18 pp (Min of Higher Education USSR. Mos Order of Lenin Power Engineering Inst) 100 copies (KL, 24-58, 119)

-43-

YETS, A.G., dotsent (Yaroslavl', ul. Stachek, d.51, kv.8); GRIGOR'YEV, V.A.

Torsion of the gall bladder. Vest.khir. 79 no.8:122-123 Ag '57.
(MIRA 10:10)

1. Iz kliniki obshchey khirurgii (zav. - prof. S.G.Rukosuyev)
Yaroslavskogo meditsinskogo instituta.
(GALL BLADDER, dis.
torsion, clin. aspects & management)

YETS, A.G., dots.; GRIGOR'YEV, V.A.

Duodenal and upper jejunal phlegmon. Khirurgiia 34 no.9:99-100
S '58.   (MIRA 12:4)

1. Iz kafedry obshchey khirurgii (zav. - dots. G.A. Dudkevich) Ya-
roslavskogo meditsinskogo instituta.
(PHLEGMON)

YETS, A.G., dots.; GRIGOR'YEV, V.A.

Blood vessels injury in peacetime. Ortop.travm. i protez. 20 no.2:
60-61 F '59.   (MIRA 12:12)

1. Iz kafedry obshchey khirurgii (zav. - prof. S.G. Rukosuyev) Yaros-
lavskogo meditsinskogo instituta.
                (BLOOD VESSELS, wounds & inj.
                     peacetime inj. (Rus))

AID P - 5205

Subject   : USSR/Engineering

Card 1/1   Pub. 107-a - 4/13

Author   : Grigor'yev, V. A., Eng.

Title   : Analysis of certain phases in roll-spot welding

Periodical   : Svar. proizv., 7, 13-15, Jl 1956

Abstract   : The specific phases of contact resistance to heat
                between electrodes and welded specimen were analyzed
                and described. The experiments were conducted with the
                D16T aluminum alloy and the 1Kh18N9T stainless steel.
                Two graphs, 1 photo-macrostructure, and 2 diagrams.

Institution : None

Submitted   : No date

GRIGOR'YEV, V. A.

"Mutation Rate in Immature Sex-Cells of D. Melanogaster, Its. Dependence on
X-Ray Dosage and Method of its Determination." Dok, AN 23, No. 8, 1939. Lab. of
Genetics and Experimntal Zoology, Leningrad State Univ.

TSELLINSKAYA, T.F.; ZAYTSEVA, N.I.; GRIGOR'YEV, V.A.

Analysis of hydrocarbon solutions of cobalt carbonyl in a flow.
Zav.lab.26 no.10:1094-1095 '60.   (MIRA 13:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh
protsessov.
                        (Cobalt carbonyl)

YETS, A.G., dotsent; GRIGOR'YEV, V.A.

Torsion of the spleen. Vest.khir. 85 no.11:130-131 N '60.
(MIRA 14:2)

1. Iz kafedry obshchey khirurgii (zav. - dotsent G.A. Dudkevich)
Yaroslvaskogo meditsinskogo instituta. Adres avtora: Yaroslavl',
ul. Yem. Yaroslavskogo, d.67, kv.22).
(SPLEEN—DISEASES)

ETS, A.G., dotsent; GRIGOR'YEV, V.A.

Penetrating wound of the thorax with a bilateral wound of the mediastinal pleura. Vest.khir. 89 no.7:110 Jl '62.

(MIRA 15:8)

1. Iz kafedry obshchey khirurgii (zav. - dotsent G.A. Dudkevich) Yaroslavskogo meditsinskogo instituta.
     (CHEST—WOUNDS AND INJURIES) (PLEURA—WOUNDS AND INJURIES)

NIKOLAYEV, A.V.; GRIGOR'YEV, V.A.

Compounds with a complex anion $[Hg(SCN)_4]^{2'}$ and their precipitates. Dokl. AN SSSR 158 no.2:415-418 S '64. (MIRA 17:10)

1. Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR. 2. Chlen-korrespondent AN SSSR (for Nikolayev).

ACCESSION NR: AP4040699   S/0135/64/000/006/0019/0021

AUTHOR: Grigor'yev, V. A. (Engineer); Grishina, A. D. (Engineer)

TITLE: Spot welding of V92 aluminum alloy

SOURCE: Svarochnoye proizvodstvo, no. 6(630), 1964, 19-21

TOPIC TAGS: aluminum zinc magnesium alloy, V92 alloy, alloy spot
welding, alloy spot weld, weld property, AMg6H alloy, aluminum zinc
alloy, magnesium containing alloy

ABSTRACT: The weldability of V92 high-strength, heat-resistant,
aluminum-base alloy (3.9—4.6% Mg, 2.9—3.6% Zn, 0.6—1.0% Mn,
0.0001—0.005% Be) in spot welding has been studied.   The best results
in welding sheets 2—3 mm thick were obtained with a welding current
of 44 ka, a current pulse duration of 0.08 sec, an electrode pressure
of 1100 kg, heat treating with a current of 23 ka for 0.14 sec, and a
forging pressure of 2000 kg applied for 0.06 sec.   The welds obtained
under these conditions had a shear strength of 810—920 kg per spot

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ACCESSION NR: AP4040699

and a peeling strength of 266—275 kg per spot. The failure occurred
mostly in base metal in the form of a tear along the spot weld peri-
meter. A welding current higher than 48 ka overheated the metal and
produced metal sputtering and voids in the welds. A smooth decrease
of the heat-treating current prevents formation of cracks, improves
weld ductility, but increases the width of the zone of columnar
dendrites. The welding current changes affect the weld strength more
strongly than the changes in the current pulse duration. The micro-
structure of the weld nugget consists of large grains of α-solid solu-
tion, a second phase (an AL-Mg intermetallic compound) located along
the axes of center-oriented columnar dendrites, and a strengthening
phase (an Al-Mg-Zn intermetallic compound) which, however, can be de-
tected only with the electron microscope. The microhardness of the
dendrite crystals, 90—100 HD, is somewhat higher than that of the
disoriented crystals of the central zone of the nugget. The base
metal and the heat-affected zone have a microhardness of 150 and
140 HD, respectively. The V92 alloy can be welded to AMg6H alloy.
The strength of the single spot welds in this case was about 15% lower.
Orig. art. has: 3 figures and 1 table.

Card 2/3

ACCESSION NR: AP4040699

ASSOCIATION: none

SUBMITTED: 00   ATD PRESS: 3047   ENCL: 00

SUB CODE: MM   NO REF SOV: 003   OTHER: 000

Card   3/3

GRIGOR'YEV, V.A.

Improving the control of friction press operations. Kuz.-shtam.
proizv. 7 no.2:45 F '65.   (MIRA 18:4)

GRIGOR'YEV, V.A., kand. tekhn. nauk; CHERNYSHEV, I.N., kand. tekhn. nauk; BRUYEV, E.V.

Control of thermal conditions in rubber tires. Avt. prom. 31 no.2:17-19 F '65.
(MIRA 18:3)

1. Moskovskiy energeticheskiy institut i Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.

L 36241-66   EWT(m)/EWP(t)/ETI   IJP(c)   JD/HW

ACC NR: AP6005420   SOURCE CODE: UR/0289/65/000/003/0050/0056

AUTHOR: Nikolayev, A. V.; Grigor'yev, V. A.

30
27
B

ORG: Institute of Inorganic Chemistry, Siberian Branch, AN SSSR, Novosibirsk
(Institut neorganicheskoy khimii Sibirskogo otdeleniya AN SSSR)

TITLE: Occlusion of cations of elements of groups I, II, and III of the D. I. Mendeleyev
periodic table by precipitates with complex anions

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 3,
1965, 50-56

TOPIC TAGS: chemical precipitation, cobalt compound, zinc compound, cadmium
compound, mercury compound

ABSTRACT: The occlusion of various cations by water-insoluble compounds of the
complex tetrathiocyanomercurate ion $[Hg(SCN)_4]^{2-}$ ($K_{diss} \sim 10^{-22}$) with divalent zinc,
cobalt, and cadmium cations was studied. The absolute value of the occlusion of micro-
impurities (elements of groups I, II, and III of the periodic table) was determined by the
method of two indicators, which makes it possible to exclude the activity introduced by the

Card 1/2   UDC: 542.05

L 36241-66
ACC NR: AP6005420   3

mother liquor from the total activity of the precipitate without using rinsing operations.
The specific surfaces of zinc, cobalt, and cadmium tetrathiocyanomercurates were
calculated. The magnitude and character of the occlusion of microimpurities by these
compounds were found to depend on the conditions of separation of the solid phase (solution
pH, excess of precipitant, duration of contact between precipitate and mother solution),
nature of the precipitates (specific surface), and chiefly the nature of the microcomponent
cation. Orig. art. has: 4 figures and 1 table.

SUB CODE: 07 / SUBM DATE: none / ORIG REF: 006 / OTH REF: 005

Card 2/2

C.

USSR/Inorganic Chemistry - Complex Compounds.

Abs Jour   : Ref Zhur - Khimiya, No 9, 1957, 30330

Author   : Alekseyevskaya, N.V., Grigor'yev, V.B., Yel'tsov, A.V.
Inst   : Leningrad of Chromium Hydroxide with Hydrogen Peroxide.
Title   : Interaction of Chromium Hydroxide With Hydrogen Peroxide.
Orig Pub   : Sb. stud. rabot Leningr. tekhnol. in-t im. Lensoveta.
             L., 1956, 18-21

Abst   : Study of changes in properties of chromogel (I) on ther-
             mal treatment and catalytic decomposition of H_2O_2 by spe-
             cimens of $\underline{I}$, prepared under different conditions. It was
             found that evolution of hygroscopic moisture ceases at
             170^c, and at 320^c $\underline{I}$ changes from amorphous to crystalline
             state. Specific surface of $\underline{I}$, determined by the BET me-
             thod, increases with temperature of the thermal treatment,
             reaches a maximum at 200 and decreases thereafter. At
             beginning of interaction of $\underline{I}$ with H_2O, the solution ac-
             quires a violet coloration due to formation of H_3CrO_5.
             When little H_2O_2 is left a vigorous reaction sets in, O_2

Card 1/2

USSR/Inorganic Chemistry - Complex Compounds.   C.

Abs Jour   : Ref Zhur - Khimiya, No 9, 1957, 30330

            is emitted together with water vapor and color of the
            solution changes to yellow. Rate of catalytic decomposi-
            tion of H_2O_2 is lowered with increasing temperature of
            the thermal treatment of $\underline{I}$. The samples of $\underline{I}$ treated at
            300' constitute an exception and show the highest activi-
            ty, which is apparently associated with the state of tran-
            sition from amorphous to a crystalline structure.

Card 2/2

GRIGOR'YEV, V.B.; SMIRNOV, N.I.

Separation of mixtures of organic liquids in a thermo-
gravitation column. Zhur. prikl. khim. 36 no.7:2030-2033
D '63.   (MIRA 17:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

GRIGOR'YEV, V.B.; SMIRNOV, N.I.

Separation of mixtures of organic liquids in a thermogravitation
column. Zhur. prikl. khim. 36 no.12:2687-2691 D'63.

(MIRA 17:2)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

GRIGOR'YEV, V.B.; SMIRNOV, N.I.

Separation of mixtures of organic liquids in a thermogravi-
tational column. Zhur. prikl. khim. 36 no.10:2228-2231
0 '63.   (MIRA 17:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

GRIGOR'YEV, V.B.; SMIRNOV, N.I.

Separation of mixtures of organic liquids in a thermogravi-
tation column. Zhur. prikl. khim. 36 no.11:2456-2460 N '63.
(MIRA 17:1)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.

L 10782-66   EWT(m)/EWP(j)   RM

ACC NR: AP6000007   UR/0080/65/038/011/2592/2594

AUTHOR: Grigor'yev, V.B.; Grigor'yeva, L.A.; Reykhsfel'd, V.O.;
Makovetskiy, K.L.; Smirnov, N.I.

ORG: Leningrad Institute of Technology im. Lensovet (Leningradskiy tekh-
nologicheskiy institut)

TITLE: Separation of polymer homologous mixtures in a thermogravitation-
al column

SOURCE: Zhurnal prikladnoy khimii, v.38, no.11, 1965, 2592-2594

TOPIC TAGS: silane, chemical separation, polymer

ABSTRACT: The article describes an attempt to apply a thermogravitation-
al column to the separation of some complex mixtures which cannot be
fractionated by other means, or only with great difficulty. In particu-
lar, the column was applied to polymer homologous mixtures obtained by
the addition of various unsaturated monomers to dimethylmethylhyropoly-
siloxanes, and also to the products of the cocyclotrimerization of
acetylenes--trisubstituted benzenes. The article gives a diagram of the
construction of the thermogravitational column. The distance between
plates was 0.3 mm, and the height of the working section of the column

Card   1/2   UDC: 541.6

L 10782-66

ACC NR: AP6000007	/1

was 774 mm. The temperature difference between the walls of the column
was 30° in the separation of products obtained by the addition of olefins
to dimethylmethylhydropolysiloxanes, and 40° in the separation of mix-
tures of alkylarylbenzenes. Results of the experimental separations are
shown in tables. These data indicate that separation in a thermogravita-
tional column is well suited to separation of polymer homologous mixtures
of large molecules which differ only slightly in their structure, and can
also be recommended for the separation of very high boiling mixtures.
Orig. art. has: 1 figure and 2 tables.

SUB CODE: 07/ SUBM DATE: 17Jan64/ ORIG REF: 003/ OTH REF: 008

Card 2/2

GRIGOR'YEV, V.B.; SMIRNOV, N.I.

Theory of separation of liquid mixtures in a thermogravitational column. Zhur. prikl. khim. 38 no. 10:2347-2349
O '65.   (MIRA 18:12)

1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
Submitted Febr. 30, 1964.

GRIGOR'YEV, V.B.; GRIGOR'YEVA, L.A.; REYKHSEL'D, V.O.; MAKOVETSKIY, K.L.;
      SMIRNOV, N.I.

     Separation of polymer homologous mixtures in a thermo-
     gravitation column. Zhur.prikl.khim. 38 no.11:2592-2595
     N '65.   (MIRA 18:12)

     1. Leningradskiy tekhnologicheskiy institut imeni Lensoveta.
     Submitted January 17, 1964.

GRIGOR'YEV, V.D.

Maintenance of drainage systems in sphagnum and polytrichosma forests. Trudy Inst. lesa 49:129-134 '59.   (MIRA 13:2)

1. Leningradskaya lesomeliorativnaya ekspeditsiya.
   (Drainage) (Forests and forestry)

GRIGOR'YEV, V.D.

Ezperience in preventing accidents at the Cherkasskayia-Severnayia
Mine No.2. Bezop. truda v prom. 4 no. 5:23-24 My '60.

(MIRA 14:5)

1. Nachal'nik Leninskoy rayonnoy inspektsii Gosgortekhnadzora USSR.
   (Cherkasskoye, Lugansk Province—Coal mines and mining)

GRIGOR'YEV, V.F.; LUK'YANOV, V.F.; DUDEROVA, Yo.P.

Analytical chemistry of uranium. Report No.1: Luminescence method
for determining uranium. Zhur.anal.khim. 15 no.2:184-190 Mr-Ap
'60.   (MIRA 13:7)
(Uranium--Analysis)   (Luminescence)

GRIGOR'YEV, V.F.

Methods of lowering prenatal mortality in deliveries in breech
position. Vop. okhr. mat. i det. 6 no. 1:80-83 Ja '61.
(MIRA 14:4)

1. Iz akusherskoy kliniki (zav. - prof. S.B. Golubchin)
Khabarovskogo meditsinskogo instituta.
(LABOR, COMPLICATED)   (INFANTS—MORTALITY)

GRICOR'YEV, V. G.

"Rock Dump with Improved Rail Head," Mekh. trud. rab., 6, No.2, 1952

GRIGOR'YEV, V. G.

PA 43071

USSR/Agriculture - Adaptation to Cold   Jan 53

"Life Activity of Plant Roots in Cold Soils,"
V. G. Grigor'yev, Inst of Permafrost Studies
imeni V. A. Obruchev, Acad Sci USSR

"Priroda" Vol 42, No 1, pp 101-104

The roots of plants growing in permafrost re-
gions are capable of penetrating the soil to a
depth of 80-100 cm and of adapting themselves to
temps below zero and to lack of water. In the
process of adaptation, the plants acquire the
ability to accumulate starch in the roots. The
roots develop a very high osmotic pressure. So

that enough water is supplied to the plants.
The older view in regard to the "physiological
dryness" of frozen soils is erroneous. Barely
and oats can be adapted to permafrost soils.
They then develop very thick roots which do not
branch, because the synthesis of nucleic acids
is apparently inhibited at low temps. (Deriva-
of these acids stimulate branching.)

243T1

243T1

KALINICHENKO, V.F., kand.tekhn.nauk; KOZLIK, V.I., inzh. (Krivoy Rog);
        GRIGOR'YEV, V.G., inzh.

        High frequency communications in the shaft of the "Bol'shevik"
        Mine. Gor.zhur. no.2:58-60 F '61.   (MIRA 14:4)

        1. Nauchno-issledovatel'skiy gornorudnyy institut (for Kozlik).
        2. Rudoupravleniye "Bol'shevik" (for Grigor'yev).
                    (Krivoy Rog—Mine communications)

GRIGOR'YEV, Vasiliy Grigor'yevich; GENDELEV, D.Z., red.; POD"YEL'SKAYA,
K.M., tekhn.red.

[For economy and thrift] Za ekonomiiu i berezhlivost'. Petro-
zavodsk. Gos.izd-vo Karel'skoi ASSR, 1958. 27 p.

(MIRA 12:12)

(Lumbering)

GRIGOR'YEV, Vasiliy Grigor'yevich; PANKRASHOV, A.P., red.; SHEVCHENKO, L.V., tekhn.red.

[For high technical and economic efficiency in logging camps]
Za vysokie tekhniko-ekonomicheskie pokazateli lespromkhozov.
Petrozavodsk, Gos.izd-vo Karel'skoi ASSR, 1958. 102 p.
(MIRA 12:12)

1. Glavnyy bukhgalter upravleniya lesnoy promyshlennosti Karel'skogo sovnarkhoza (for Grigor'yev).
                    (Lumbering)

ACC NR: AP6021771   SOURCE CODE: UR/0413/66/000/012/0030/0031

INVENTOR: Chernousov, V. A.; Grigor'yev, V. G.; Karpov, N. Ya.

ORG: None

TITLE: Diaphragm assembly for a gasdynamic shock unit. Class 12, No. 182691

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 12, 1966, 30-31

TOPIC TAGS: shock wave, gas dynamics

ABSTRACT: This Author's Certificate introduces a diaphragm assembly for a gasdynamic shock unit. The installation consists of a housing divided by diaphragms into several compartments which are interconnected by pipelines with cutoff valves. The assembly is simplified by communication between the compartments through channels built into the housing.

Card 1/2   UDC: 66.02:62.553,6

ACC NR: AP6021771
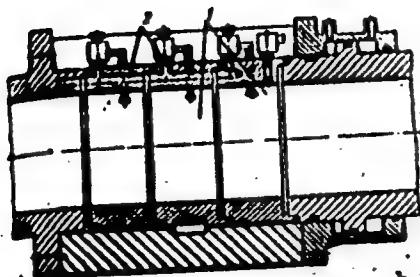
1—compartments; 2—channels

SUB CODE: 20, 14/ SUBM DATE: 30Jul65

Card 2/2

ACC NR: AP6035493   SOURCE CODE: UR/0413/66/000/018/0115/0115

INVENTOR: Chashchin-Semenov, K. V.; Grigor'yev, V. G.; Nikolayev, V. M.; Shifrin, E. G.

ORG: none

TITLE: Axisymmetric, shaped nozzle for wind tunnels. Class 42, No. 186167

SOURCE: Izobret prom obraz tov zn, no. 18, 1966, 115

TOPIC TAGS: axisymmetric nozzle, wind tunnel, hypersonic wind tunnel, boundary layer suction

ABSTRACT: The proposed axisymmetric, shaped nozzle for wind tunnels with low density flow, such as hypersonic, is made of separate rings with adjustable slots between them for boundary layer suction. In order to simplify the design and to reduce it, the size of the nozzle is made with two female chambers. The chambers are insulated one from another by a movable partition and are connected by channels with the cavity of the working chamber. In addition to this, an ejector is mounted in the channel of the end chamber to increase the boundary layer suction.

SUB CODE: 21/4/SUBM DATE: 22Aug64
UDC: 620.178
Card 1/1

GRIGOR'YEV, V. I

BABZY, M.; GRIGOR'YEV, V. I

Improving the construction of the connecting device for pushing
barges on waves. Mor. i rech.flot 14 no.6:7-10 Je '54. (MLRA 7:7)
(Towing)

BABBY, M.L., inzhener; GRIGOR'YEV, V.I.

Improving the ease of tow pushing. Mech. transp. 16 no.3:29-32
Mr '57.   (MLRA 10:4)
        (Towing)   (Barges)

PUSHKINA, G.A.; GRIGOR'YEV, V.I.

Rapid method for the determination of the ash content of peat.
Gaz. prom. no.3:22-24 Mr '58.   (MIRA 11:3)
                    (Peat--Analysis)

GRIGOR'YEV, V.I.

Transportation apparatus for taking motion pictures of movement.
Tekh. kino i telev. no. 8:30-38 Ag '59.   (MIRA 11:8)

1. Ordena Lenina kinostudiya "Mosfil'm."
                    (Cinematography)

GRIGOR'YEV, V.I.

Some special features of the hydrological regime of the lakes
in the Tonino-Anivskiy Peninsula, southern Sakhalin. Vest. Mosk.
un. Ser. 5: Geog. 17 no.6:68-70 N-D '62.   (MIRA 16:1)
                    (Tonino-Anivskiy Peninsula—Lakes)

VSEVOLOZHSKIY, Yu.V.; GALKIN, A.F., aspirant; GRIGOR'YEV, V.I., aspirant

Sudan grass as economic green fodder. Zhivotnovodstvo 23
no.5:54-55 My '61.   (MIRA 16:2)

1. Direktor sovkhoza "Kommunist" Khar'kovskoy oblasti (for
Vsevolozhskiy). 2. Khar'kovskiy sel'skokhozyaystvennyy
institut (for Galkin, Grigor'yev).
                              (Sudan grass)

STRELYUKHIN, A.K., prof.; SHELEST, Ye.N.; SHCHERBAKOVA, N...; GRIGORYEV, V.I.; MAROCHKIN, V.V.

Examination of the higher nervous activity in workers of the carbon disulfide department of the Ryazan Combine of Artificial Fibers. Nauch. trudy Riaz.med.inst. 23:97-103 '63.
(MIRA 18:12)

1. Kafedra psikhiatrii (zav. kafedroy - prof. A.K.Strelyukhin) Ryazanskogo meditsinskogo instituta imeni akademika I.P. Pavlova.

GRIGORYEV, V.I.; OKSMAN, M.I., redaktor; BELIKOV, B.S., redaktor; SOKOLOVA, R.Ya., tekhnicheskiy redaktor.

[Automatic stations of subscription telegraph, type ATA-50; with supplementary series of diagrams] Avtomaticheskie stantsii abonentskogo telegrafa tipa ATA-50; s prilozheniem komplekta skhem. Moskva, Gos. izd-vo lit-ry po voprosam sviazi i radio, 1954. 31 p.   (MLRA 7:12)
        (Telegraph--Automatic systems)

GRIGOR'YEV, VSEVOLOD IVANOVICH

GRIGOR'YEV, Vsevolod Ivanovich; KOSTANYANTS, Boris Aleksandrovich; HATNIKS August Indrikovich; BUSAMKINA, N.G., redaktor; KHELEMSKAYA, L.M., tekhnicheskiy redaktor

[Apparatus for subscribers to the telegraph system; information manual] Apparatura abonentskogo telegrafa; informatsionnyi sbornik. Moskva, Gos. izd-vo lit-ry po voprosam svyazi i radio, 1954. 110 p. Supplement: [Album of the principal circuits] Al'bom printsipial'-nykh skhem. 1 v. (unpaged, diagrs.)

1. Russia (1923-   U.S.S.R.) Ministerstvo svyazi. Tekhnicheskoye upravleniye.
        (Telegraph--Apparatus and supplies)

GRIGOR'YEV, V.I., inzhener.

Automatic telegraph stations for subscribers. Vest.sviazi 14 no.1:
3-5 Ja '54.
(MLRA 7:5)

1. Nauchnyy sotrudnik TsNIIS. (Telegraph stations)

Grigor'yev, V. I.

USSR/Electronics - Telegraphy

Card 1/1   Pub. 133 - 13/16

Authors   : Grigor'yev, V. I.

Title   : Incorporation of start-stop regenerators on individual telegraph stations

Periodical   : Vest. svyazi 5, 27-28, May 1955

Abstract   : Problems regarding the application of start-stop regenerative translations for rectification of telegraph signals relayed to individual telegraph stations, are discussed. Diagrams depicting an auxiliary installation which permits the utilization of the same translation in a two directional transmission are presented with the explanation of methods for its application on individual telegraph lines. Diagrams.

Institution : .....

Submitted   : .....

GRIGOR'YEV, V.I.

Optimum communication quality indices for subscriber telegraph.
Elektrosviaz' 10 no.8:69-73 Ag '56.   (MIRA 9:9)
                (Telegraph)

GRIGOR'YEV, V.I., inzhener, mladshiy nauchnyy sotrudnik.

Automatic telegraph subscriber station of small capacity (ATA-10/3).
Vest.sviazi 17 no.1:4-6 Ja '57.   (MLRA 10:2)

1. TSentral'nyy nauchno-issledovatel'skiy institut svyazi.
         (Telegraph--Appparatus and supplies)

GRIGOR'YEV, V. I. and BELONOGOV, G. G.   (Moscow)

"Application of Methods of Machine Translation to Lexical Codification of Telegraph and Telephone Communications."

Theses - COnferences on Machine Translations, 15-21 May 1958, Moscow.

G RIGORE'YE 1, L.I

AUTHOR: Grigor'yev, V. I.   106-58-3-9/19

TITLE: Protection of Automatic Telegraph Exchange Equipment from
          False Calls (Zashchita oborudovaniya stantsiy ATA ot
          lozhnykh vyzovov)

PERIODICAL: Elektrosvyaz', 1958, Nr 3, pp 63 - 64 (USSR)

ABSTRACT: In an automatic telegraph switching system, false
          signals due to pulses of noise cause false operation of the
          search mechanisms, extra wear and tear, and increase the number
          of refusals, i.e. worsen the service. Extensive analysis of
          operation over a long period showed that 75 - 80% of noise
          pulses have durations less than 100 millisec and 85% have a
          multiple nature. Protection against pulses which lie on the
          70 - 80 millisec range will give adequate protection. Alteration
          of the "called" relay circuit to delay its operation will give
          protection. A suitable modification of the circuit is des-
          cribed. There are 4 figures.

SUBMITTED: August 26, 1957

AVAILABLE: Library of Congress
Card 1/1
             1. Telegraph systems-Operation   2. Telegraph systems-Error reduction

1959

GRIGOR'YEV, V.I.; TARAKANOVA, M.S.

Adaptation of the direct junction system to telegraph communication.
Vest. sviazi 19 no.7:3-5 Jl '59.   (MIRA 13:8)

1. Starshiy inzhener TSentral'nogo nauchno-issledovatel'skogo instituta
svyazi (for Grigor'yev). 2. Starshiy inzhener Glavnogo upravleniya
mezhdugorodnoy telefonnoy i telegrafnoy svyazi Ministerstva svyazi
SSSR (for Tarakanova).
                    (Telegraph)

NAUMOV, Pavel Alekseyevich; CHANTSOV, Sergey Dmitriyevich. Prinimali
uchastiye: PRANGEK, O.F.; GRIGOR'YEV, Y.I,   PEREGUDOV, A.N.,
retsenzent; LESHCHUK, I.A., retsenzent; KORDOBOVSKIY, A.I.,
retsenzent; TOMASHEVSKIY, B.A., otv.red.; KIRILLOV, L.M., red.;
MARKOCH, K.G., tekhn.red.

[Course in telegraphy] Kurs telegrafii. Moskva, Gos.izd-vo
lit-ry po voprosam sviazi i radio. Pt.2. [Sunchronous apparatus,
voice-frequency carrier and subscriber's telegraph exchanges,
measurements and automatic control] Sinkhronnye apparaty,
tonal'noe i abonentskoe telegrafirovanie, izmereniia i avtomati-
zatsiia. 1961. 294 p.   (MIRA 14:12)
                    (Telegraph)

GRIGOR'YEV, Vsevolod Ivanovich; KRAVCHENKO, El'vira Nikolayevna;
SELIVANOV, Afanasiy Stepanovich; GRIGOR'YEV, V.I., otv. red.;
ULANOVSKAYA, N.M., red.; ROMANOVA, S.F., tekhn. red.

[Adaption of ATA stations to operation in networks with direct
connections] Prisposoblenie stantsii ATA dlia raboty na seti
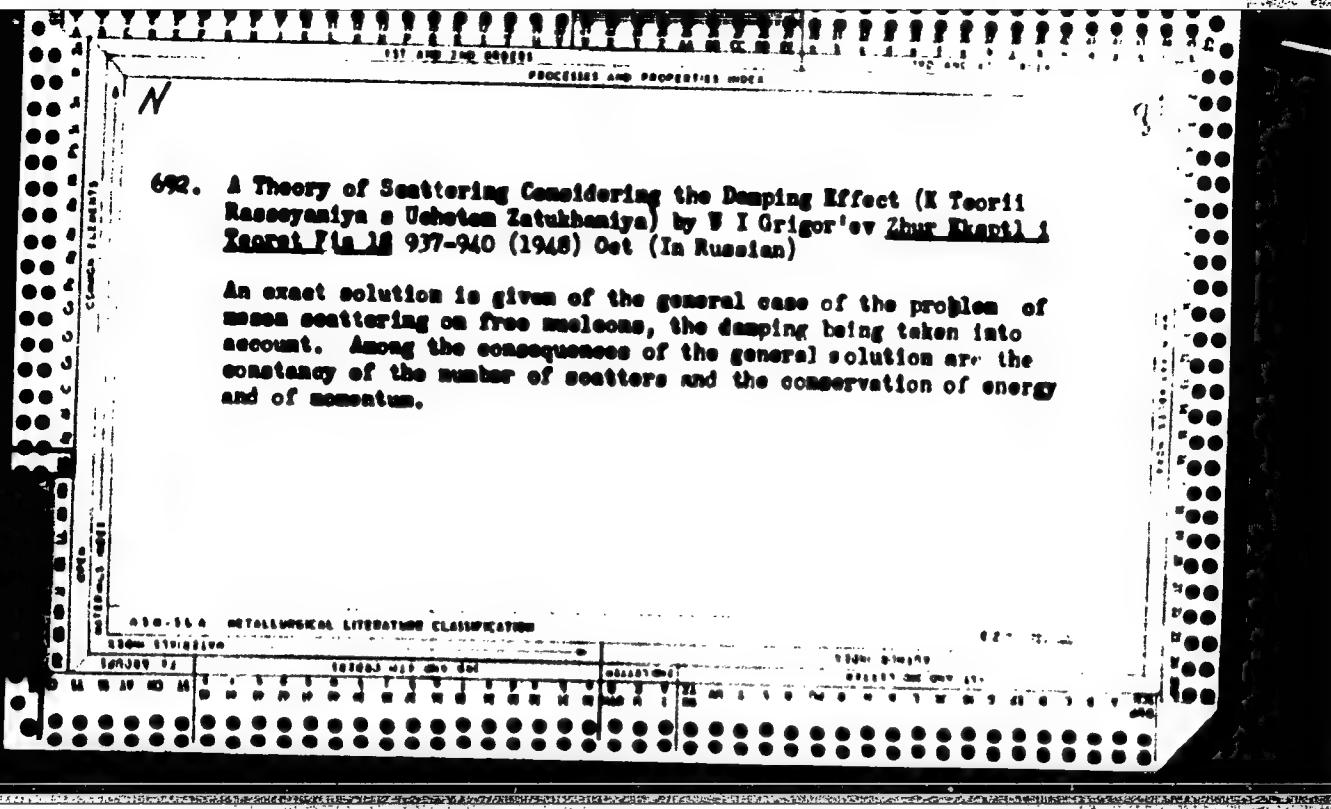priamykh soedinenii. Moskva, Sviaz'izdat, 1963. 69 p.
(MIRA 16:6)

(Telegraph)

SAPOZHKOV, Mikhail Andreyevich; GRIGOR'YEV, V.I., otv. red.; VOLKOVA,
E.M., red.; SHEFER, G.I., takhn. red.

[Speech signal in cybernetics and communication; speech conver-
sion applicable to problems in telecommunication engineering
and cybernetics] Rechevoi signal v kibernetike i sviasi; preob-
razovanie rechi primenitel'no k zadacham tekhniki sviasi i ki-
bernetiki. Moskva, Sviaz'izdat, 1963. 449 p.   (MIRA 16:5)
(Information theory) (Cybernetics)

GRIGOR'YEV, Vsevolod Ivanovich; KIRILLOV, L.M., red.

[Organization of telegraph communication using a straight
connections system] Organizatsiia telegrafnoi sviazi po
sisteme priamykh soedinenii. Moskva, Sviaz'izdat, 1961. 41 p.
(MIRA 17:1)

692. A Theory of Scattering Considering the Damping Effect (K Teorii
Rasseyaniya s Uchetom Zatukhaniya) by V I Grigor'ev Zhur Eksptl i
Teoret Fiz 18 937-940 (1948) Oct (In Russian)

An exact solution is given of the general case of the problem of
meson scattering on free nucleons, the damping being taken into
account. Among the consequences of the general solution are the
constancy of the number of scatters and the conservation of energy
and of momentum.

GRIGOR'YEV, V. I.

"Problem of the Nonlinear Effects in Quantum Electrodynamics." Sub 12 Sep 51,
Moscow Order of Lenin State U imeni M. V. Lomonosov

Dissertations presented for science and engineering degrees in Moscow during 1951.
Cand physics-math sci

SO: Sum. No. 480, 9 May 55.

GRIGOR'EV, V. I.

Grigor'ev, V. I. (Physics) The problem concerning the shift of levels of bound electrons. P. 29

Chair of Theoretic Physics
July 12, 1950

SO: Herald of the Moscow University (Vestnik), Series on Physical, Mathematical and Natural Sciences, No. 2, Vol. 6, No. 3, 1951

GRIGOR'YEV, V.I.

3

Ivanenko, D., and Grigor'ev, V. On an interpretation of regularization in quantum electrodynamics. Akad. Nauk SSSR. Žurnal Eksper. Teoret. Fiz. 21. 563-566 (1951). (Russian)

The authors' point of view is that it should be possible to interpret physically the mathematical devices of regularization procedures, and that it should not be necessary to distinguish between "realistic" and "formalistic" theories. In particular, Feynman's "formalistic" use of an auxiliary mass [Physical Rev. (2) 74, 1430-1438 (1948); these Rev. 10, 345] is shown to be equivalent to a replacement of the ordinary field equations by higher order equations. A fifth coordinate is introduced in these equations, and interpreted as an internal degree of freedom; it is linked up with the relation between the rest-mass of the field and the constant which determines the interaction between field and particles. The well-known conditions for cancellation of the singularities [Pauli and Villars, Rev. Modern Physics 21, 434-444 (1949); these Rev. 11, 301] follow from these higher order equations if a discrete spectrum of auxiliary masses is assumed. It is further shown that such a regularization procedure does not remove the infinite energy of the zero-point fluctuations.
                                    E. Gora (Providence, R. I.).

Source: Mathematical Reviews,   Vol 13 No. 2

539.153

687.   On the problem of estimation in the theory of bound particles. V. L. Germanov. Zh. Eksper. Teor. Fiz., 21, 1310-12 (No. 11, 1951) In Russian.

Apart from the natural spread of atomic energy levels in spontaneous and induced transitions, an effective shift is obtained due to estimation. These shifts differ for different energy levels, being proportional to transition probabilities. This shift is smaller by 3 orders of magnitude than that calculated by Bethe.

A. Jackson

USSR .

42. Generalized method of calculation of damping in the quantum theory of fields. V. I. GRIGOR'YEV. *Zh. dksper. tear. Fiz.*, 25, No. 1(7) 40–50 (1953) In Russian. The theory of Sokolov [*Journal of Physics, USSR*, 5, 231, 1941] is used as a starting point. Contrary to the usual calculation of non-stationary processes by the variation of constants method, the amplitude of the initial state depends on time so that the sum of the squares of all amplitudes is always unity; since this method furnishes the classical radiation resistance, it is termed a "theory with calculation of damping." The process of absorption and emission of photons is considered in detail. The equations are cast into a form employing only amplitudes $C_k^{(I,J)}$, describing an electron in state k after absorption of I photons and emission of J photons. Modification of usual formulae occurring in non-stationary processes are considered (scattering cross-sections at high energies are made finite, etc.).   O. I. BROWN

GRIGOR'YEV, V.I.

USSR.

The role of damping in the theory of associated particles.
V. I. Grigor'ev (Petroleum Inst., Moscow). *Zhur. Eksptl.
i Teoret. Fiz.* 25, 51-0(1953); cf. *C.A.* 47, 4730i; Anikina,
C.A. 43, 7880d; preceding abstr.—Equations are de-
veloped to account for the damping in photon dispersion
by free and assocd. electrons. A qual. analysis of the
over-all solution of these equations leads to the conclusion
that damping can cause a shift in the electron levels as well
as its broadening.   J. Rovtar Leach

$x(1) + x(x'(= l, l+l,$

SUBJECT   USSR / PHYSICS   CARD 1 / 2   PA - 1372

AUTHOR   GRIGOR'EV, V.I.

TITLE   A Generalized Method for the Purpose of Taking Account of Damping in the Relativistic Quantum Theory.

PERIODICAL   Žurn. eksp. i teor. fis, 30, fasc.5, 873-880 (1956)
Issued: 8 / 1956   reviewed: 10 / 1956

A system of an infinite number of connected equations is constructed each of which describes a process with the production and absorption of a certain number of particles. The here discussed solution contains the normalization, and from it, as approximations, the results of the theory of damping and, as zero-th approximation, the results of the perturbation theory are obtained. The usual equation for the scattering matrix serves as a basis: $i\hbar c\, \delta U[\sigma]/\delta\sigma(x) = \mathcal{H}(x)U(\sigma)$. The operator function $\mathcal{H}$ of the interaction and the therein contained operators of the free fields are given. The solution must take the following physical facts into account: The probability of the initial state decreases in the course of time because of the interaction among the particles, and at the same time the probabilities to new states, which compete among one another, increase: The transitions themselves prove to be absorption- and emission processes of free particles with different energies and momenta. The scattering matrix is here set up as a sum of the operators of all sorts of types of transitions. However, this "splitting up" of the matrix U alone is not sufficient, but it is necessary to find equations that connect all part-matrices, and these equations must be solved with a certain degree of accuracy.

Žurn.ekap.i teor.fis, **10**, fasc. 5, 873-880 (1956) CARD 2 / 2   PA - 1372

The corresponding system of equations is written down and discussed. However, the right sides are not explicitly mentioned because of their complicated nature (128 terms), but only the method of constructing these terms is demonstrated, after which the terms that correspond to the following processes are written down as typical examples and discussed in short: Absorption of a photon and absorption of an electron in a state and their emission into another state, emission of a photon on the occasion of the transition of an electron from one state into another, absorption of a previously emitted photon with simultaneous creation of an electron-positron pair, emission of a previously absorbed photon and absorption of a previously emitted electron-positron pair, transition of a positron from one state into another with emission of a photon. Next, the solution of the equations by means of a solution ansatz is discussed. As the theory is formulated in explicitly covariant form, divergences can be removed by the same methods as in the usual theory. The computation method is suited for several simultaneously occurring fields and for different kinds of generalizations (higher derivations, nonlinear interactions, nonlocal problems, steady problems).

INSTITUTION: Moscow State University

GRIGOR'YEV, V. I.

1061

QUANTUM FIELD THEORETICAL SOLUTIONS WITHOUT
PERTURBATION THEORY V. I. Grigor'ev (Moscow
Petroleum Inst.) Soviet Phys. JETP 4 1(9-11-1657; Aug

JR

2

GRIGOR'EV, V.I.

AUTHOR: GRIGOR'EV,V.I.   PA - 2074
TITLE: A Solution in the Quantum Field Theory obtained without Resort
to the Perturbation Theory. (O rešenii bez metoda vosmuśćenij
v kvantovoj teorii polja, Russian).

ABSTRACT: When dealing with the processes occurring in the systems con-
sisting of bosons and fermions it is possible to divide for in-
stance the general matrix U (σ) of transitions into a number
of part matrices U $\int [\sigma]$. The equations connecting the matrices
$U{\binom{\int}{}} - U^{(i,j; n,m;k,l)} U^{(i,j;n,m;k,l)}$ to one another describe a
transition which consists of absorptions of i-bosons, n-fermions
and k-antifermions as well as of the emission (j,m,l) of these
particles. These equations in principle offer the possibility of
finding the precise recurrence relations between these $U{\binom{\int}{}}$ by
which new possibilities for the analysis of solutions without
resort to the perturbation theory are found.
To avoid rather complicated calculations the antifermions are
not dealt with here. In this case k and l can be eliminated and
n can be put equal to m. The result is a considerable simplifi-
cation of the equation for $U{\binom{\int}{}}$. This simplified equation is

Card 1/2

A Solution in the Quantum Field Theory obtained without Resort
to the Perturbation Theory.

explicitly written down, after which the solution ansatz for
the aforementioned system is explicitly written down and ex-
plained in short.
By inserting this expression into the initial equation the re-
currence formulae for the unknown functions
$F_1^{()} \ldots F_8^{()}$ are obtained without difficulty. These relations
are explicitly written down. The solution determined by these
relations is accurate with the exception of the coupling con-
stant.
The impression is conveyed that the solution is assumed in the
form of transcendental functions of the operators, so that its
practical application necessitates a development in series.
This is, however, not the case for certain expressions occurring
here represent combinations of wave packets.

ASSOCIATION: Moscow Mineral Oil Institute
PRESENTED BY: (Pei uu)
SUBMITTED:
AVAILABLE: Library of Congress

Card 2/2

GRIGOR'YEV, V.I.

Classical current model investigation of the solution exact .
according to coupling constant. Nauch. dokl. vys. skoly; fiz.-
mat. nauki no.1:89-94 '58.   (MIRA 12:3)

1.Moskovskiy neftyanoy institut.
           (Particles, Elementary)

21(1)
AUTHORS: Grigor'yev, V. I.,   Myakishev, G. Ya.

SOV/55-58-6-10/31

TITLE: On Virtual and Real Transitions in the Quantum Theory
              (O virtual'nykh i real'nykh perekhodakh v kvantovoy teorii)

ABSTRACT: In the modern quantum theory two kinds of transitions are
              investigated: the real and the virtual transitions. The vir-
              tual transitions do not obey the law of the conservation of
              energy (from the solution the relativistically invariant
              relation between energy and momentum does not follow). Transi-
              tions of particles from one state into another always develops
              via virtual states, the physical sense of which is negative.
              Besides, this process is not dealt with in a uniform manner
              in publications. On the one hand, the same initial conditions
              are assumed for the matrix of the virtual transitions as for
              the real ones, and on the other, the initial conditions of
              the processes in the second order are assumed, which, however,
              leads to the same result. For processes of the third order
              the results are different. This fact, does, however, not
Card 1/3   prove an existing classification into real and virtual processes.

SOV/55-58-6-10/31

On Virtual and Real Transitions in the Quantum Theory

In the present article the possibility of dealing differently
with quantum transitions, without distinguishing between
virtual and real processes, is investigated, and the attempt
is made to show that the differences in the solu-
tions are not connected with this classification into virtual
and real processes. The intermediate states, about which
the perturbation theory is not able to say anything, can
also, by the existence of the indeterminancy relation, be
considered to be real ones. As an example, the transition
matrix for processes of the 1. order (emission or absorption
of a photon by a free electron) is investigated. It is shown
that the virtual processes may be considered to be real,
in which case the law of the conservation of energy is
maintained to the extent to which it comprises the maintenance
of the relation $\Delta E_0 \geqslant \hbar/\tau$. From this point of view, the

total matrix $V\left[\vec{\sigma}\right]$ is then considered to be the sum of all
partial transition matrices. The simplified model of the
C-currents, in which the boson field is secondarily quantized
and the currents may be considered to be classical, is in-
vestigated. General equations of the perturbation theory

Card 2/3

On Virtual and Real Transitions in the Quantum Theory   SOV/55-58-6-10/31

are obtained, and it is concluded that also the equations of
the perturbation theory may represent the relations between
the various real transitions without the introduction of
virtual transitions. It is further proved that the transition
matrices in form of P-derivatives do not necessitate any
splitting up into real and virtual states. Questions relating
to the uniqueness of these solutions require further investi-
gations. The authors thank Yu. M. Shirokov for discussing
the problems arising in the course of this investigation.
There are 4 references, 3 of which are Soviet.

ASSOCIATION: Kafedra obshchey fiziki dlya mekhaniko-matematicheskogo
fakul'teta
(Chair of General Physics for the Mechanical and Mathematical
Department)

SUBMITTED: December 12, 1957

Card 3/3

VAVILOV, B.T., GRIGOR'YEV, V.I.

Relation between the matrices of various transitions and multiple
processes. Zhur. eksp. i teor. fiz. 39 no.3:794-799 S '60.
(MIRA 13:10)

1. Moskovskiy gosudarstvennyy universitet.
(Particles (Nuclear physics))

84967

S/056/60/039/003/053/058/XX
B006/B070

24.4500

AUTHORS: Vavilov, B. T., Grigor'yev, V. I.

TITLE: Relation Between the Matrices of Various Transitions and
               Multiple Processes

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
               Vol. 39, No. 3(9), pp. 794 - 799

TEXT: The aim of the authors was to construct an infinite system of
"chain" equations interrelating the matrices of various transitions. A
transition from the initial state $|ink\rangle$ (i bosons, n fermions, and k anti-
fermions) to the final state $|jml\rangle$ is considered, the transition being
characterized by the matrix $V^{(ij,nm,kl)}[\sigma,\sigma_0]$. This matrix is related
to the general transition matrix $V[\sigma,\sigma_0]$ by the relation
$\langle jml| V^{(ij,nm,kl)}[\sigma,\sigma_0]|ink\rangle = \langle jml|V[\sigma,\sigma_0]|ink\rangle$ (1). A method is de-
scribed in the introduction for obtaining the system of equations con-

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necting the various transition matrices $V_j^{(f)}$, by means of which the fol-
lowing system is obtained (2):

$$i\delta V^{(ij,nm,kl)}/\delta\sigma = \sum_{\substack{\alpha,\beta,\gamma \\ a,b,c \\ p,q,r}} \hat{H}\binom{\alpha\beta\gamma}{abc} V^{(i-a+ap,j-\alpha+ap;n-b+bq,m-\beta+bq;k-c+cr,l-\gamma+cr)}$$

The term $\hat{H}\binom{\alpha,\beta,\gamma}{abc}$ of the interaction Hamiltonian
contains the production and absorption operators α,β,γ and a,b,c,
respectively, of the bosons, fermions, and antifermions. Mass renormali-
zation is carried out with the conditions $V^{(11,00,00)}[\sigma,\sigma_o] = 0$, and
$V^{(00,11,00)}[\sigma,\sigma_o] = 0$. The results obtained are applied to the problem
of N charged scalar (pseudoscalar) bosons in a fermion-fermion collision.
The following assumptions are made for this purpose: Fermion-antifermion
pairs are produced neither in the final state nor in the intermediate
one; the nucleon collisions may be arbitrary; the energies are so high

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